application in condition for allowance. Favorable consideration of all pending claims is respectfully requested. Amendments and/or cancellation of claims have been made in the interest of expediting prosecution of this case. Applicants reserve the right to prosecute the same or similar subject matter in this or another application.

In the Office Action dated March 25, 2002, the Examiner has made final the restriction requirement issued previously and has withdrawn from consideration claims 5, 11-26, and 29. By this amendment, Applicants have canceled claims 5, 11-26, and 29 without prejudice and reserve the right to file one or more divisional applications directed to the canceled claims.

Claims 6, 8, 10, 27, and 28 have been objected to under 37 C.F.R. § 1.75(c) as allegedly being in improper form since a multiple dependent claim should refer to other claims in the alternative only and/or cannot depend from any other multiple dependent claim. As presently amended, Claim 6, 8, 10, and 27 no longer depend from other multiple dependent claims. Claim 28 has been canceled. In addition, Applicants have added Claims 30- 41which newly added claims recite subject matter deleted from Claims 6, 8, 10, 27, and 28 in order to conform to 37 C.F.R. § 1.75(c). Withdrawal of the objection to Claims 6, 8, 10, and 27 under 37 C.F.R.§ 1.75(c) is therefore respectfully requested.

Claims 1-4, 6-10, and 27-28 have been rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was allegedly not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors had possession of the invention at the time the application was filed. It is the Examiner's opinion that the present application describes only an isolated nucleic acid of SEQ ID NO:1 encoding a protein of SEQ ID NO:2 that interacts with CDC2aAt in a yeast two-hybrid assay and that has homology to Arabidopsis D-type cyclins. According to the Examiner, "[t]he instant application does not describe a mitogenic

cyclin function for the protein encoded by SEQ ID NO:2." Further, according to the Examiner, "[t]he instant application does not describe sequences hybridizing to a DNA sequence of SEQ ID NO:1 or a DNA sequence encoding SEQ ID NO:2. The instant application does not describe DNA sequences encoding an amino acid sequence at least 70% identical to the amino acid sequence of SEQ ID NO:2. The instant application does not describe other novel mitogenic sequences and DNA sequences encoding them." March 25, 2002 Office Action, pages 3-4.

Applicants respectfully traverse the rejection of Claims 1-4, 6-10 and 27-28 as allegedly violative of the written description requirement of 35 U.S.C. §112, first paragraph for the following reasons. In the first instance, the present application describes a mitogenic cyclin function for the protein encoded by SEQ ID NO:2. Page 4 of the specification discloses '[t]he term "mitogenic" refers to compounds (chemicals or proteins) which positively influence reentry into the cell cycle and/or progression of the cell cycle; see also Example 4. The term "Cyclin" means one of the proteins which actively regulate cell division.' Example 1 of the specification describes the identification of a cell cycle interacting protein, LDV59. Example 4 of the specification describes the mitogen-inducible nature of LDV59. Summarizing the teaching provided in Example 4, *Arabidopsis* cell suspensions were depleted for growth factors for 48 hours, after which, the cells were split into eight aliquots which were resuspended in medium containing sucrose or lacking sucrose, containing auxin or lacking auxin, and containing cytokinin or lacking cytokinin. After 6 hours, RNA was extracted from the cells, run on a gel, blotted, and probed with the LDV59 gene. A hybridization signal was only observed for the cells supplemented with cytokinin and sucrose, indicating that the LDV59 gene is specifically induced by these mitogenic agents. Written description providing further support that the protein

encoded by SEQ ID NO:2 is a mitogenic cyclin function may be found in the specification from the penultimate line of page 5 to page 7, line 2.

With respect to the Examiner's comments that the present application does not describe DNA sequences encoding an amino acid sequence at lest 70% identical to the amino acid sequence of SEQ ID NO:2, Applicants respectfully submit the following. As page 5 of the specification indicates, the novel mitogenic gene of the present invention is designated LDV59 or *CYCD4;1*. At page 6 of the specification, Applicants teach that the CYCD4;1 protein only shows significant sequence similarity to other *A. thaliana* D-type cyclins within its amino terminal domain, especially with respect to the cyclin box (Figure 1). Considering only the cyclin box region, the exemplified CYCD4;1 protein has an amino acid sequence identity of 61.3%, 69.8 % and 66.6% with other known *A. thaliana* D-type cyclins (CYCD1, CYCD2, and CYCD3, respectively.) When the entire amino acid sequences are compared, sequence identity drops considerably. See Table 1. Page 4 of the specification describes the presently claimed DNA sequences encoding an amino acid sequence at least 70% identical to the amino acid sequence of SEQ ID NO:2. Thus, contrary to what the Examiner asserts, such DNA sequences are described by the present application. Such a description would include e.g., allelic variants of CDC4:1.

The Examiner also asserts that the present application does not describe sequences hybridizing to a DNA sequence of SEQ ID NO:1 or a DNA sequence encoding SEQ ID NO:2. Page 7 of the specification however, describes such sequences.

Applicants respectfully submit, that the written description requirement under 335 U.S.C. § 112, first paragraph, does not *presently* (considering the Written Description Guidelines, *Fed. Reg. 66* (4), January 2001) nor has it *ever*, demanded exemplification or even a reduction to

practice of the claimed invention. Thus, Applicants respectfully request that the Examiner reconsider the rejection of Claims 1-4, 6-10 and 27-28 as allegedly violative of the written description requirement using indicia other than exemplification and/or reduction to practice of the claimed sequences.

Reduction to practice is only *one* way to show possession of the invention. Thus, with respect to DNA sequences encoding an amino acid sequence at least 70% identical to the amino acid sequence of SEQ ID NO:2, or which hybridize to SEQ ID NO:1, Applicants may use indicia other than reduction to practice to show possession of the invention. For example, the written description requirement for a claimed genus may be satisfied by disclosure of "relevant, identifying characteristics, i.e., complete or *partial* structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics." Written Description Guidelines, *Fed. Reg. 66*(4), page 1106. Thus, for example, an amino acid sequence identity of greater than 70% to SEQ ID NO:2 or a DNA sequence which hybridizes under stringent hybridization conditions to the sequence set forth in SEQ ID NO:1 certainly provides such relevant, identifying characteristics sufficient to show Applicants were in possession of the subject matter recited in Claims 1, 6-10, and 27-28.

The proper test for sufficiency of description in a patent application is whether the disclosure of the application relied upon "reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter. *In re Kaslow*, 707 F.2d 1366, 1375, 217 USPQ 1089, 1096 (Fed. Cir. 1983). Exactly how the specification allows one skilled in the art to recognize that an applicant had possession of the claimed invention is not material. *In re Smith*, 481 F.2d 910, 178 USPQ 279 (CCPA 1973). Typically, an applicant conveys that he or

figures, diagrams, formulas, etc., that set forth the claimed invention." *Lockwood v. American Airlines,* 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). To comply with the description requirement, it is not necessary that the application describe the invention *ipsis verbis*. *In re Lukach*, 442 F.2d 967, 169 USPQ 795 (CCPA 1971). What is required is that an ordinarily skilled artisan recognize from the disclosure that applicants invented the subject mater of the claims, including the limitations recited therein. *In re Smith*, 481 F.2d at 915, 178 USPQ at 284.

It is respectfully submitted that the claims as presently amended are sufficiently supported by the written description provided in the specification since, based on the foregoing remarks, one skilled in the art would reasonably believe that Applicants invented the subject matter recited therein. Withdrawal of the rejection of Claims 1-4, 6-10 and 27-28 under 35 U.S.C. §112, first paragraph, is therefore warranted.

Claims 2, 3, 10, and 28 have been rejected under 35 U.S.C. § 112, first paragraph, as allegedly reciting subject matter which is non-enabled by the specification. According to the Examiner, "Applicants only teach the isolation of a nucleic acid of SEQ ID NO:1 encoding a protein of SEQ ID NO:2 using a yeast two-hybrid assay with CDC2Aat as bait. The specification also discloses that the protein encoded by SEQ ID NO:1 has homology to other Arabidopsis D-type cyclins. The specification does not disclose any mitogenic function for the protein encoded by SEQ IDNO:1. The specification does not disclose the isolation of other novel mitogenic cyclins and DNA sequences encoding them." Office Action, page 5.

Applicants repeat, reassert, and incorporate by reference the discussion above which demonstrates with particularity that the present application teaches the isolation of many different nucleotide sequences which either code for amino acid sequences having greater than

70% identity to SEQ ID NO:2, or which hybridize under stringent conditions to the sequence set forth in SEQ ID NO:1. Moreover, Applicants repeat, reassert, and incorporate by reference the discussion above which demonstrates with particularity that the present application teaches a mitogenic function for the protein encoded by SEQ ID NO:1. Although the specification may not *exemplify* the isolation of other mitogenic cyclins and DNA sequences encoding them, or immunologically active or functional fragments thereof, the enablement requirement of 35 U.S.C.§ 112, first paragraph does *not* require such.

It is well established that the law construing 35 U.S.C.§ 112, first paragraph, does not require a specific example of everything within the scope of the broad claims. *In re Anderson*, 471, F,2d 1237, 1240-41, 176 USPQ 331, 333 (CCPA 1973). In fact, the law does not require *any* specific working examples.

> If the Examiner and/or Board intended a rejection under the first paragraph of 112, it must be reversed *inasmuch as the specification contains a statement of Appellant's invention which is as broad as Appellant's broadest claims.*

In re Robins, 429 F.2d 452, 456, 166 USPQ 552, 555 (CCPA 1970)(emphasis added).

What is required under the statute and relevant case law is that the present specification provide sufficient teaching to enable one skilled in the art to isolate other mitogenic cyclins and DNA sequences encoding them as presently recited by the claims. Thus, "it is essential that there be no question that *at the time an application for patent is filed*, the invention claimed therein is *fully capable of being reduced to practice* (i.e., that no technological problems, the resolution of which would require more than ordinary skill and time, remain in order to obtain an operative, useful embodiment.)" *In re Argoudelis*, 434 F.2d 1390, 1395 (CCPA 1970)(Baldwin, J., concurring) (second emphasis added).

On page 5 of the Office Action, the Examiner asserts that the specification does not describe any use whatsoever of a DNA sequence of Claim 1 or 4 or a vector of claim 6 or 7. With respect to uses for a DNA sequence of Claim 1 or 4, Applicants submit that such teachings may be found throughout the specification and as an example, direct the Examiner to page 21 of the specification which teaches:

> Specifically, the plant cell division rate and/or the inhibition of a plant cell division can be influenced by overexpression or reducing the expression of a gene encoding a protein according to the invention. Overexpression of a cyclin gene according to the invention promotes cell proliferation, while reducing cyclin expression arrests cell division or prevents reentry into the cell cycle, Part of the invention is thus the usage of a cylin comprising the coding sequence or part thereof as mentioned hereinbefore as a negative or positive regulator of cell proliferation

Specification, page 21, lines 11-18.

With respect to uses of a vector of Claim 6 or 7, Applicants direct the Examiner to the specification, e.g., page 13, line 9, to page 16, line 11, which teach one skilled in the art different uses for vectors presently claimed in Claim 6 and 7.

With respect to the Examiner's assertion that "[w]hile one of skill in the art could readily identify DNA sequences encoding amino acid sequences homologous to SEQ ID NO:2, it would require undue experimentation for one of skill in the art to determine which of those sequences encode a protein having a mitogenic cyclin function," Applicants respectfully submit the following. One skilled in the art, having the specification of the present application in hand as of the filing date (priority date) could have easily determined whether a sequence homologous to SEQ ID NO:2 exhibits mitogenic function without having to resort to undue experimentation. One only has to refer to Example 4 of the present application to find a method for determining

the presence of mitogenic function. Thus, plant cell suspensions may be depleted for growth factors after which, the cells may be split into different aliquots and resuspended in medium either containing or lacking mitogenic agents, e.g., containing sucrose or lacking sucrose, containing auxin or lacking auxin, and containing cytokinin or lacking cytokinin. After a sufficient time period, RNA may be extracted from the cells, run on a gel, blotted, and probed with the isolated sequence encoding an amino acid sequence exhibiting greater than 70% sequence identity with SEQ ID NO:2. A hybridization signal only observed for the cells supplemented with a mitogenic agent indicates that the isolated sequence is specifically induced by these mitogenic agents and thus encodes a protein exhibiting mitogenic cyclin function.

Further in this regard, submitted herewith as Exhibit A is an article by Soni, R. et al. (1995) "A Family of Cyclin D Homologs from Plants Differentially Controlled by Growth Regulators and Containing the Conserved Retinoblastoma Protein Interaction Motif" *The Plant Cell, 7*:85-103, which shows that as of the filing date (priority date) of the present application, skilled artisans were aware of methods of determining mitogenic cylcin function. *See* Soni et al. (1995), pages 93-95, "Induction by Carbon Source and Phytohormones." Similar to the teachings of the present application in Example 4, suspension cultures were used to study the effects of hormonal and nutritional signals (mitogenic agents, i.e., plant hormones [auxin, cytokinin] and sucrose) on cyclin gene expression and the cell cycle.

In order to be considered enabling, the specification must teach a skilled artisan how to make and use the full scope of the claimed invention without "undue experimentation." *Genentech Inc. v. Novo Nordisk, A/S,* 108 F.3d 1361, 1365, 42 USPQ2d 1001, 1004 (Fed. Cir. 1997); *In re Wright*, 999 F. 2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993). In performing the analysis, the key word is "undue", not "experimentation." *In re Angstadt*, 537

F.2d 498, 504, 190 USPQ 214, 219 (CCPA 1976). The question of whether the claims of a patent are sufficiently enabled by a disclosure in a specification is determined as of the date the patent application was first filed. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986). Whether undue experimentation would have been required at the time the application was originally filed is not a single, simple factual determination, but is a conclusion reached by weighing many factual considerations. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). The test is not merely quantitative, as a considerable amount of experimentation is permissible, if it is merely routine (such as routine screening), or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed. *In re Wands*, 858 F.2d at 737, 8 USPQ2d at 1404.

It is respectfully submitted, that one of ordinary skill in the art, with the teachings of the present application and the teachings of the literature extant at the time the application was filed (priority date) could have implemented the methods and compositions of the present invention without resorting to undue experimentation. Through use of a two-hybrid system whereby CDC2aAt is used as bait, or, alternatively, through hybridization experiments using sequence data provided by the present application, one skilled in the art could readily isolate other coding sequences for mitogenic cyclins having an amino acid sequence identity of greater than 70% to the sequence set forth in SEQ ID NO:2. Further, following the teachings of the present application and the literature extant at the time the application was filed (priority date), one skilled in the art could confirm that such isolated sequences encode a mitogenic cyclin, i.e., a cyclin which is induced by mitogenic agents by experiments such as those described in Example 4 of the specification. The skilled artisan following the teachings of the present invention, could

then make promoter-gene constructs and transform plants with such constructs in order to produce plants which overexpress such a subject mitogenic cyclin in order to promote cell proliferation or which reduce expression of a subject mitogenic cyclin in order to arrest cell division or prevent reentry into the cell cycle.

The Examiner has also cited a reference, Doerks et al. (19980 "Protein Annotation: detective work for function prediction" *TIG 14* (6):248-250, to suggest that the presently claimed mitogenic cyclins might encompass sequences which in fact, are not mitogenic cyclins due to findings that homology of predicted amino acid sequences to known proteins does not always predict the function of the homologous sequences. As discussed above, however, Applicants claims recite in relevant part, a DNA sequence encoding a mitogenic cylcin which is defined in the specification not only by sequence information but also by function, i.e., a protein which actively regulates cell division and which is positively influenced by chemicals or proteins to reenter into the cell cycle and/or progression of the cell cycle. *See* specification, page 4, lines 25-28. Thus, the findings of Doerks et al. with respect to protein function *prediction* based on sequence homology alone, is not relevant to Applicants' claimed nucleotide sequences as set forth in SEQ ID NO:2 and other mitogenic cyclins presently recited in the claims. Doerks et al. is not relevant since the claim preamble recites that the protein is a mitogenic cyclin, thereby requiring that the claimed protein have a specific function and also since the specification clearly demonstrates that SEQ ID NO:2 has such a mitogenic cyclin function (*see* Example 4). On an even more basic level, Example 2 of the specification demonstrates that the protein encoded by SEQ ID NO:2 associates with Cdc2aAt and Cdc2bAt, indicating that the cyclin of the present invention binds to its cyclin dependent kinase partner. *See* pages 1-3 for background on cyclin dependent kinases (CKDs) and their specific cyclin partner. Moreover, in addition to the

different well-accepted functions ascribed to the mitogenic cyclins, which have been documented by the present specification for the of the sequences of the present invention, specific consensus sequences are also present in the subject SEQ ID NO:2. For example, as taught by the present specification (page 3, line 6), all D-type cyclins show a specific amino acid motif (LXCXE), permitting them to bind to a retinoblastoma protein (Rb). The LDV59 protein (SEQ ID NO:2) of the present invention also contains the Rb interacting motif .

See specification, page 35, line 24, and Figure 1 which shows the LXCXE motif at the amino terminal end. Moreover, a cyclin box is easily discernable in Figure 1 for this protein.

Thus, the mitogenic cyclins of the present invention clearly have a well-defined structure and demonstrated function. At the time the application was filed, one skilled in the art would have reasonably believed that Applicants had isolated a coding sequence for a novel mitogenic cylin. As described on page 5 of the application, using the nomenclature of Renaudin et al. (1996) *Plant Mol. Biol. 32*:1003-1018, LDV59 (SEQ ID NO:2) may also be referred to as CYCD4;1, a novel class of D-type cyclin. Moreover, using the teachings of the specification and the literature extant as of the priority date of the present application, other sequences embraced by the present claims could routinely be isolated and identified without undue experimentation. Withdrawal of the rejection of Claims 1-4, 6-10, and 27-28 under 35 U.S.C.§ 112, first paragraph, is therefore warranted.

The Examiner has made a number of rejections under 35 U.S.C. § 112, second paragraph. Specifically, Claim 2 has been rejected as allegedly incomplete for the step of identifying and obtaining mitogenic cyclins. As presently amended, Claim 2 recites the step of identifying and obtaining mitogenic cyclins. Claim 1 is allegedly indefinite for not reciting specific hybridization conditions. As presently amended, Claim 1 recites "stringent hybridization

conditions." Claim 1 is allegedly indefinite for recitation of "functional fragment." As presently amended, Claim 1 recites "or functional fragment thereof which has mitogenic cylin activity." Claim 1 is also allegedly indefinite in the recitation of "is at least 70% identical to." As presently amended, Claim 1 recites "has at least 70% sequence identity to."

Claims 1, 4, and 10 are allegedly indefinite in the recitation of "mitogenic cyclin." According to the Examiner, many structurally and functionally distinct cyclins are known to participate in mitosis. The Examiner has suggested that the claims be amended to recite a structurally and functionally distinct type of cyclin. Applicants respectfully submit that Claims 1, 4, and 10 *do* recite a structurally and functionally distinct type of cyclin. The structure of the claimed cyclin is described in terms of its sequence. The function of the subject protein is defined by it being a cyclin and therefore a protein which actively regulates cell division (*see e.g.*, specification, page 4, lines 27-28), and by it being a mitogenic cyclin. The term mitogenic as understood by those of skill in the art and as defined in the specification does not mean that the cyclin participates in mitosis. Rather, the term mitogenic cyclin means a cyclin which is influenced by compounds (chemicals or proteins) which positively influence reentry into the cell cycle and/or progression of the cell cycle. *See* specification, page 4, lines 25-26. *See also* Soni et al. (1995), (Exhibit A), which teaches a D-type cylin designated δ3, is induced by the plant growth regulator cytokinin and a D-type cyclin designated δ2 is induced by carbon source.

Claim 6 is allegedly indefinite in its recitation of "a" before "DNA sequence." Claim 6 is presently amended to recite "the DNA sequence." Claim 27 has been amended to recite a specific means for detection (a probe) as well as DNA being detected.

Claim 28 has also been rejected for various reasons under section 112, second paragraph. By this amendment, Claim 28 is cancelled without prejudice. Applicants have added Claims 38

and 39 which recites subject matter to which Applicants are entitled. Support for the subject matter presently recited in claims 38 and 39 may be found throughout the specification, e.g., page 21, lines 7-1

In view of the amendments to the claims and the remarks hereinabove, withdrawal of the rejection of claims 1, 2, 4, 6-8, 10, 27, and 28 under 35 U.S.C. § 112, second paragraph is respectfully requested.

Claims 1-4 and 8-9 have been rejected under 35 U.S.C.§ 101 as allegedly directed to non-statutory subject matter. As presently amended, Claim 1 recites in relevant part "An isolated DNA sequence". Claims 2 and 3 although included in the Examiner's rejection, do not recite DNA and so have not been amended. Withdrawal of the rejection of Claims 1-4 and 8-9 under 35 U.S.C. § 101 is therefore respectfully requested.

Claim 28 has also been rejected under 35 U.S.C. § 101. In view of the cancellation of Claim 28, the rejection is moot.

Claims 1, 6-10, and 27-28 have been rejected under 35 U.S.C. § 101 as allegedly not supported by either a specific asserted utility or a well asserted utility. Applicants respectfully traverse the rejection for the following reasons. First, the claims *do* recite a specific function for the claimed DNA. As discussed extensively *supra*, a mitogenic cyclin is a cyclin which actively regulates cell division and which is influenced by compounds (chemicals or proteins). With respect to part (d) of Claim 1, a DNA sequence encoding an amino acid sequence having at least 70% sequence identity with the sequence set forth in SEQ ID NO:2 is not encompassed by the claim if it lacks mitogenic cyclin activity. The Examiner is incorrect in asserting that "no empirical data is provided to support a D-type cyclin function for the protein of SEQ ID NO:2." In response to this assertion of the Examiner, Applicants submit that Example 2 of the

specification teaches that the claimed DNA sequences encode a cyclin which not only binds CDC2aAt but also CDC2bAt. Thus, the cyclin binding partner to the cyclin dependent kinases, CDC2aAt and CDC2bAt, has been isolated and identified in accordance with the present invention. As taught on page 2 of the specification, association of specific cyclin dependent kinases (CDKs) with their specific cyclin partner is *one way the activity of cdk/cyclin complexes is regulated.* Thus, the cyclins of the present invention clearly have a function. That the function of D-type cyclins is induced by mitogenic signals is taught by the prior art, *see* Soni et al. (Exhibit A) specifically referenced on page 3 of the specification. Moreover, the present specification in Example 4 teaches that expression of the presently claimed cyclin is mitogenic inducible. Therefore, Applicants have not assigned a function to the cyclin of the present invention based on sequence comparisons alone as the Examiner has suggested on page 10 of the Office Action. Rather, Applicants have carefully described the cyclin of the present invention in terms of function and structure using indicia well known and accepted by those skilled in the art.

On page 10, final paragraph of the Office Action, the Examiner states that "the specification does not disclose any modulation of cell cycle proteins by the protein encoded by the claimed DNA sequence, or any use of this protein in an agricultural or plant cell or tissue culture context. Applicant does not teach how the claimed DNA sequence or its encoded protein would be substantially beneficial to the public. Although DNA sequences encoding proteins of known function have a well established utility, DNA sequences encoding proteins of unknown function do not." It is respectfully submitted that the Examiner's assertions are in error for the following reasons. First, Applicants do teach throughout the specification how the DNA sequences and their encoded proteins would be substantially beneficial to the public. Page 21 of the specification clearly teaches that the invention may be used to modulate the cell division and

growth of cells, such as in plant *in vitro* cultures. For example, the present specification teaches that overexpression of a cyclin gene according to the invention promotes cell proliferation while reducing cyclin expression arrests cell division or prevents reentry into the cell cycle. *See* specification, page 21. Moreover, Example 5 of the specification teaches that the cyclin of the present invention is involved in early stages of vascular tissue, lateral root formation and embryo development. Moreover, since the subject cyclins have a known function, the claimed DNA sequences encoding them have a well established utility. Therefore, proteins having mitogenic cyclin activity such as those described by the present specification have substantial benefit to the public. Inasmuch as the claimed invention is *amply* supported by both a specific asserted and a well established utility, the rejection of Claims 1, 6-10, and 27-28 under 35 U.S.C. § 101 is in error. Withdrawal of the rejection is therefore warranted.

Claims 1, 6-10 and 27-28 have also been rejected under 35 U.S.C. § 112, first paragraph. According to the Examiner, "since the claimed invention is not supported by either a specific asserted utility or a well established utility", one skilled in the art would not know how to use the invention. Applicants respectfully traverse the rejection. As discussed with particularity directly above, the invention is clearly and amply supported by both a specific and well established utility. Thus, one skilled in the art would certainly know how to use the invention. Withdrawal of the rejection of Claims 1, 6-10 and 27-28 under 35 U.S.C. §112, first paragraph, is therefore respectfully requested.

Claim 1 has been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by GenEmbl Accession No. Y10162, published June 19, 1997. The present application, U.S. Serial No. 09/530,209 was filed in the U.S. Patent and Trademark Office on April 24, 2000 as a section 371 application (national phase filing) of PCT/EP98/06749. A proper claim for foreign priority

under 35 U.S.C.§ 365(a) and (b) and § 119(a)- (d) was made at the time the present application was filed. Indeed, both the combined inventors' declaration/power of attorney and filing receipt indicate that a claim for foreign priority benefits under 35 U.S.C. § 365(a), (b) and § 119 (a)-(d) was duly made. Thus, the present application is entitled to a priority date of October 24, 1997. Since June 19, 1997 is *not* more than one year prior the effective filing date of the present application, i.e. October 24, 1997, the rejection of Claim 1 under 35 U.S.C. § 102(b) is in error. Withdrawal of the rejection of Claim 1 under 35 U.S.C. § 102(b) is therefore respectfully requested.

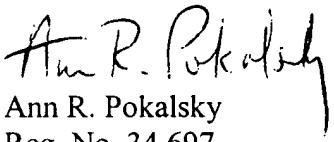
Claims 1-4, 6-10 and 27 have been rejected under 35 U.S.C. § 103(a) as allegedly rendered obvious over DeVeylder et al. (August 4, 1997) "The Arabidopsis Cks1 At protein binds the cyclin-dependent kinases Cdc2At and Cdc2bAt" *FEBS Letters 412*:446-452. Applicants respectfully traverse the rejection for the following reasons. As discussed in the previous paragraph, the present application is entitled to a priority date of October 24, 1997. The Lieven De Veylder et al. article cited against the present application is alleged to have been published in August of 1997, which date precedes the priority date of the present application by about two months.

Submitted herewith is a declaration (unexecuted) under 35 U.S.C.§ 1.132 indicating that the named inventors on the present application *to wit*, Dirk Inze, Lieven DeVeylder, and Janice De Almeida, are also three coauthors on the DeVeylder 1997 article; that the three named inventors on the present application believe that the invention of the present application was made jointly by them; that the other coauthors on the De Veylder 1997 article were included on the article along with the names of Dirk Inze, Lieven DeVeylder and Janice De Almeida, but not as an indication that they were inventors of the subject matter of the present application.

One's own invention, whatever the form of disclosure to the public, may not be prior art against oneself, absent a statutory bar. *In re Facius*, 408 F.2d 1396, 1406, 161 USPQ 294, 302 (CCPA 1969) *cited with approval in In re Katz*, 687 F.2d 450, 215 USPQ 14 (CCPA 1982). Since the DeVeylder et al. publication occurred less than one year before the priority date of the present application, the disclosure comes within the scope of § 102(a) only if the description is not Applicants' own work. Since the declaration submitted herewith indicates that the DeVeylder et al. publication is a description of Applicants' own work, it is therefore not valid prior art under 35 U.S.C. § 103 (a) against the claims of the present invention. The remaining reference, Fuerst et al. (1996) "Modulation of Cyclin Transcript Levels in Cultured Cells of Arabidopsis thaliana" *Plant Physiol. 112*:1023-1033, fails to teach or suggest the claimed invention. An executed form of the declaration under 37 C.F.R. §1.132 will be submitted forthwith. Upon receipt of the executed declaration, and in view of the foregoing comments, withdrawal of the rejection of claims 1-4, 6-10, and 27 under 35 U.S.C. § 103(a) is warranted.

In view of the foregoing remarks, amendments to the claims, declaration and exhibit submitted herewith, it is firmly believed that the present application is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) [A] An isolated DNA sequence encoding a mitogenic cyclin or encoding an immunologically active and/or functional fragment thereof having mitogenic cyclin activity [of such a protein,]selected from the group consisting of:

(a) DNA sequences comprising a nucleotide sequence encoding a protein comprising the amino acid sequence as given in SEQ ID NO:2;

(b) DNA sequences comprising a nucleotide sequence as given in SEQ ID NO:1;

(c) DNA sequences hybridizing under stringent hybridization conditions with the complementary strand of a DNA sequence as defined in (a) or (b);

(d) DNA sequences encoding an amino acid sequence which [is] has at least 70% sequence identity [identical] to the amino acid sequence encoded by the DNA sequence of (a) or (b);

(e) DNA sequences, comprising a [the] nucleotide sequence [of which is degenerated as a result of the genetic code to a nucleotide sequence of a DNA sequence] as defined in any one of (a) to (d) wherein the nucleotide sequence is degenerated as a result of the genetic code ; and

(f) DNA sequences encoding a fragment of a protein encoded by a DNA sequence of any one of (a) to (e).

2. (Amended) A method for identifying and obtaining mitogenic cyclins comprising a two-hybrid screening assay wherein CDC2a as a bait and a cDNA library of a plant cell suspension as prey are used and wherein said mitogenic cyclins identified as interacting with CDC2a are obtained.

4. (Amended) [A] An isolated DNA sequence encoding a mitogenic cyclin obtainable by the method of claim 2 or 3.

6. (Amended) A vector comprising [a] the DNA sequence of claim 1 [or 4].

7. (Amended) The vector of claim 6 which is an expression vector wherein the DNA sequence is operatively linked to one or more control sequences allowing the expression of said DNA sequence in prokaryotic and/or eukaryotic host cells.

8. (Amended) A host cell [containing] comprising [a] the vector of claim 6 [or 7 or a DNA sequence of claim 1 or 4].

10. (Amended) A method for the production of a mitogenic cyclin or an immunologically active or functional fragment thereof having mitogenic cyclin activity comprising culturing a host cell of [claim] any of claims 8, 32 or [9] 34 under conditions allowing the expression of the protein and recovering the produced protein from the culture.

27. (Amended) A diagnostic composition comprising a DNA sequence of claim 1,[4 or 5, a vector of claim 6 or 7, a protein of claim 11, an antibody of claim 12, or the compound of claim 26,]and optionally suitable means for detection of said DNA sequence wherein the means for detection is a probe.

Claims 30-41 are newly added.